GENERAL EQUILIBRIUM IN CLOSED/OPEN ECONOMIES

(1) CLOSED ECONOMY/AUTARKY

- 2 goods, X (non-food), Y (food)
- 2 factors of production, K (capital), L (labor)
- Markets are perfectly competitive

Conditions for general equilibrium:

\[
P_x/P_y = MRT \quad (1)
\]

\[
P_x/P_y = MRS \quad (2)
\]

\[
X_c = X_p, \quad Y_c = Y_p \quad (3)
\]

where \( P_x \) and \( P_y \) are prices, \( X_c \) and \( Y_c \) are demands for goods, and \( X_p \) and \( Y_p \) are supplies
**FIGURE 1: CLOSED ECONOMY EQUILIBRIUM**

\[ \frac{P_x}{P_y} = p^a = \text{autarky prices} \]
(2) TRADING ECONOMY

Suppose world prices $p^* = P_x*/P_y*$

*Trade balance condition is:*

$$P_x^* (X_c - X_p) + P_y^* (Y_c - Y_p) = 0 \quad (4)$$

where $(X_c - X_p)$ and $(Y_c - Y_p)$ are *excess demands*

- if $X_c > X_p$, good $X$ is imported, i.e. *positive* excess demand
- if $Y_c < Y_p$, good $Y$ is exported, i.e. *negative* excess demand

(4) can be re-arranged as:

$$P_x^* X_p + P_y^* Y_p = P_x^* X_c + P_y^* Y_c \quad (5)$$

i.e. at world prices, the value of production should equal the value of consumption
FIGURE 2: TRADING ECONOMY EQUILIBRIUM

\[ \frac{P^*_x}{P^*_y} = p^* = \text{world prices} \]
FIGURE 3: TRADING EQUILIBRIA
FIGURE 4: EXCESS DEMAND FOR X

\[ (X_c - X_P) \]

\[ 0 \]

\[ (X_c - X_P) \]
International equilibrium is:

\[ E_x^h + E_x^f = 0 \]  \hspace{1cm} (6)